

The following is claimed:

1. A Universal Serial Bus (“USB”) adapter for providing a source of power to a mobile device through a USB port, comprising:

a plug unit for coupling to a power socket and for receiving energy from the power socket;

a power converter electrically coupled to the plug unit, the power converter being operable to regulate the received energy from the power socket and to output a power requirement to the mobile device;

a primary USB connector electrically coupled to the power converter for connecting to the mobile device and for delivering the power requirement to the mobile device; and

an identification subsystem electrically coupled to the primary USB connector for providing an identification signal at one or more data lines of the primary USB connector.

2. The USB adapter of claim 1, wherein the plug unit is configured to couple directly with the power socket.

3. The USB adapter of claim 2, wherein the plug unit is configured to couple to at least one power socket selected from the group consisting of: North American power socket, United Kingdom power socket, European power socket, Australian power socket, airplane power socket, and automobile power socket.

4. The USB adapter of claim 1, further comprising a plug adapter that is configured to couple the plug unit to the power socket.

5. The USB adapter of claim 4, wherein the plug adapter is configured to couple to at least one power socket selected from the group consisting of: North American power socket, United Kingdom power socket, European power socket, Australian power socket, airplane power socket, and automobile power socket.

6. The USB adapter of claim 1 wherein the identification signal comprises a voltage level that is applied to at least one of the data lines in the primary USB connector.
7. The USB adapter of claim 6 wherein the identification signal comprises a logic high signal on the D+ data line and a logic high signal on the D- data line.
8. The USB adapter of claim 1 wherein the identification subsystem comprises a hard-wired connection of a voltage level to one or more data lines in the primary USB connector.
9. The USB adapter of claim 1 wherein the identification subsystem comprises a USB controller that is operable to provide a voltage level to one or more data lines in the primary USB connector.
10. The USB adapter of claim 1, wherein the identification subsystem further comprises a switch that is operable to couple electrically the power requirement output from the power converter to the primary USB connector.
11. The USB adapter of claim 10, wherein the identification system is operable to cause the switch to disconnect the power requirement output from the primary USB connector.
12. The USB adapter of claim 11, wherein the identification system is operable to cause the switch to reconnect the power requirement output to the primary USB connector.
13. The USB adapter of claim 1, further comprising an auxiliary USB connector.
14. The USB adapter of claim 13, wherein the data lines of the auxiliary USB connector are coupled to the data lines of the primary USB connector via the identification subsystem.
15. The USB adapter of claim 13, wherein the power converter is operable to output a power requirement to the auxiliary USB connector.
16. The USB adapter of claim 1, wherein the USB adapter is integrated with a USB hub or host.

17. The USB adapter of claim 1, further comprising:
a battery receptacle for providing a location at which to attach a rechargeable battery; and
a battery charging subsystem electrically coupled between the battery receptacle and the power converter, the battery charging subsystem being operable to receive energy from the power converter and to provide power at the battery receptacle.

18. The USB adapter of claim 1, wherein the power converter comprises at least one component selected from the group consisting of: switching converter, transformer, DC source, voltage regulator, linear regulator and rectifier.

19. A method for providing energy to a mobile device using a USB adapter that comprises a plug unit, a primary USB connector, a power converter electrically coupled between the plug unit and the primary USB connector, and an identification subsystem electrically coupled to the primary USB connector, the method comprising the steps of:

coupling the USB connector to the mobile device;
coupling the plug unit to a power socket;
outputting a power requirement to the mobile device via the power converter and the USB connector; and
providing an identification signal to the mobile device, via the identification subsystem and the USB connector, that is operative to inform the mobile device that the USB adapter is not limited by the power limits imposed by the USB specification.

20. The method of claim 19, further comprising the step of:
detecting the presence of the identification signal by the mobile device.

21. The method of claim 19, further comprising the step of:

electrically disconnecting the power requirement from the USB connector.

22. The method of claim 21, further comprising the step of:

electrically reconnecting the power requirement to the USB connector to allow the power requirement to be outputted to the mobile device.

23. A powering system for a mobile device having a USB connector; comprising:

a power distribution subsystem in the mobile device that is operable to receive energy through the USB connector and to distribute the energy to at least one component in the mobile device; and

a USB adapter for coupling to the USB connector, the USB adapter comprising a plug unit for coupling to a power socket and that is operable to receive energy from the power socket, a power converter electrically coupled to the plug unit for regulating the received energy and for providing a power requirement to the power distribution subsystem, and an identification subsystem that is operable to transmit an identification signal that is operative to identify the USB adapter as not being limited by the power limits imposed by the USB specification.

24. The system of claim 23, further comprising a charging subsystem in the USB power adapter configured to couple the power converter to a battery receptacle to directly charge a rechargeable battery.

25. A Universal Serial Bus ("USB") adapter for providing a source of power to a mobile device through a USB port, comprising:

a plug unit for coupling to a power socket and for receiving energy from the power socket;

a power converter electrically coupled to the plug unit, the power converter being operable to regulate the received energy from the power socket and to output a power requirement to the mobile device;

a primary USB connector electrically coupled to the power converter for connecting to the mobile device and for delivering the outputted power requirement to the mobile device; and

an auxiliary USB connector having data lines that are electrically coupled to the data lines of the primary USB connector.

26. The USB adapter of claim 25 further comprising an identification subsystem electrically coupled to the primary USB connector for providing an identification signal at one or more data lines of the primary USB connector.

27. The USB adapter of claim 26 wherein the identification signal comprises a voltage level that is applied to at least one of the data lines in the primary USB connector.

28. The USB adapter of claim 27 wherein the identification signal comprises a logic high signal on the D+ data line and a logic high signal on the D- data line.

29. The USB adapter of claim 26 wherein the identification subsystem comprises a hard-wired connection of a voltage level to one or more data lines in the primary USB connector.

30. The USB adapter of claim 26 wherein the identification subsystem comprises a USB controller that is operable to provide a voltage level to one or more data lines in the primary USB connector.

31. The USB adapter of claim 26 wherein the identification subsystem further comprises a switch that is operable to electrically couple the power requirement output from the power converter to the primary USB connector.

32. The USB adapter of claim 31 wherein the identification system is operable to cause the switch to disconnect the power requirement output from the primary USB connector.
33. The USB adapter of claim 32 wherein the identification system is operable to cause the switch to reconnect the power requirement output to the primary USB connector.
34. The USB adapter of claim 25 wherein the power converter is operable to output a power requirement to the auxiliary USB connector.
35. The USB adapter of claim 25 further comprising:
a battery receptacle for providing a location at which to attach a rechargeable battery; and
a battery charging subsystem electrically coupled between the battery receptacle and the power converter, the battery charging subsystem being operable to receive energy from the power converter and to provide a charge at the battery receptacle.
36. The USB adapter of claim 25 wherein the power converter comprises at least one component selected from the group consisting of: switching converter, transformer, DC source, voltage regulator, linear regulator and rectifier.